



SITE SCREENING REPORT  
BROWN'S DUMP  
JACKSONVILLE, FLORIDA  
SITE #J29  
ESD PROJECT #86E-168

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*Copy in Appendix*

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BROWN'S DUMP  
JACKSONVILLE, FLORIDA

INTRODUCTION

A site screening investigation of Brown's Dump (now Mary McLeod Bethune Elementary School) was conducted on November 1, 1985. This investigation was conducted by Messrs. Fred Sloan and Nelson Langub, U. S. Environmental Protection Agency (US-EPA), Environmental Services Division (ESD). Messrs. Paul Stone, Walter Reppenhagen (FIT) and Ms. Frieda Griffiths (TAT) were also present.

BACKGROUND AND SITE DESCRIPTION

Brown's Dump is located at 4330 Pearce St. (33rd St. and Pearce St.). There is very little background information available for this site. US-EPA file information (1) indicates that the site began operation in 1949 and ceased operation in 1963, when the school was constructed. Site reconnaissance of the school yard by sampling personnel revealed no obvious signs of the extent of past dumping activities. Reconnaissance of the small creek north of the school, however, revealed the possible extent of the dump (see Figure 1). The southern bank of the creek is constructed of apparent fill material to the approximate area indicated in Figure 1. The school currently enrolls only children of kindergarten age and 6th graders.

A total of 16 samples were collected during this study; 3 surface water, 2 ground water, 3 sediment, 3 surface soil, 3 subsurface soil and 2 subsurface saturated zone soil. Figure 1 is a site sketch showing the relative locations of sampling activity.

SUMMARY AND CONCLUSIONS

The analytical results of this site screening investigation do not indicate significant contamination of this site with organic materials. The analytical results do, however, indicate high levels of lead in surface soil samples collected at the school. Subsurface soil sample results indicate that the lead contamination is much less pronounced in samples collected along the southern edge of the school yard, but does continue below the surface on the north side of the school.

RECOMMENDATIONS

Further sampling activities are needed at this site immediately to confirm or deny the presence of high levels of lead in surface soils in the school yard. Sampling is also recommended in the surrounding neighborhood, since the lead contamination is apparently not confined solely to the dump area. Soil boring techniques should be used to determine the areal extent of the old dump. Within the limits of the old dump, subsurface sampling should be conducted to determine the vertical extent of the lead contamination.

The direction of ground water flow should also be determined and ground water sampling conducted upgradient and downgradient of the dump site, if possible. It should be determined whether or not the creek along the north boundary of the school provides a break in the shallow aquifer. Drainage areas for surface water runoff from the dump site should also be located and sampled.

Prior to extensive sampling, attempts should be made to locate and interview personnel who may have been involved with the dump site when it was active and during any reclamation or closure activities prior to (or during) the construction of the school. A set of aerial photographs showing the history of the site would also be useful to sampling crews.

#### DATA DISCUSSION

A summary of sampling station locations is included as Table 1. Refer to Figure 1 for a site sketch showing the relative locations of these sampling stations and a summary of lead data concerning samples collected during this investigation. Table 2 is a summary of field analytical results. Table 3 is a summary of cyanide and metal analyses for soil samples, Table 4 is a summary of cyanide and metal analyses for water samples, Table 5 contains organic compound data for soil samples and Table 6 contains organic compound data for water samples. These analytical data have been subjected to a limited QA/QC review by FIT and ESD laboratory personnel. The results of this evaluation indicate:

- o Potentially significant low levels of trace metals in the ground water may have gone undetected as a result of elevated detection limits.
- o All of the samples analyzed at the mobile laboratory located at the Jacksonville Naval Air Station were contaminated with iron, zinc and aluminum as a result of laboratory contamination and these values should not be used for any purpose.
- o The remainder of the inorganic and organic data may be used for non-enforcement pre-NPL listing site evaluation purposes.

#### Field Analyses

Nothing unusual was noted in field analyses of surface water and ground water samples (see Table 2).

#### Metals and Cyanide

Soil - High concentrations of lead were noted in the three surface soil samples collected at the school. Sample J29-16S (temporary monitoring well #3), the surface soil sample collected in the southwest corner of the school, contained 433 ug/g lead. Sample J29-13S (temporary monitoring well #2), the surface soil sample collected in the southeast corner of the school, contained 236 ug/g lead, 151 ug/g of manganese, 101 ug/g of barium and 0.086 ug/g of mercury. Sample J29-11S (temporary monitoring well #1), the surface soil sample collected north of the school, contained 170.1 ug/g lead, 79.6 ug/g manganese, 59.7 ug/g barium and 0.089 ug/g of mercury. High concentrations

of lead (228.8 ug/g) were also noted in one subsurface soil sample, J29-12S (temporary monitoring well #1), collected at the same location as J29-11S. J29-12S also contained 411.0 ug/g of manganese, 486.5 ug/g barium, 18.4 ug/g cadmium, 46 ug/g of chromium, 1.6 ug/g of arsenic and 0.28 ug/g mercury. The next highest level of lead reported in a subsurface soil sample was 32 ug/g in J29-14S (temporary monitoring well #2), collected at the same location as J29-13S.

Water - Only cyanide, selenium and manganese were reported present in water samples. Cyanide was reported at 11 ug/l in sample J29-01W, the upstream water sample, but was not detected in sample J29-05W, a duplicate. Cyanide was reported at 11 ug/l in sample J29-03W, the downstream surface water sample. Sample J29-19W (temporary monitoring well #2), contained 13 ug/l of cyanide.

#### Organic Compounds

Soil - Only one sample contained any reported organics. Sample J29-06S, the upstream sediment sample, contained one Base/Neutral/Acid extractable peak at 10-100 ug/g. A duplicate of this sample, J29-02S, had no reported peaks, however.

Water - Only one sample contained any reported organics. Sample J29-05W, the upstream surface water sample, contained one peak in the pesticides scan at 1-10 ug/l. A duplicate of this sample, J29-01W, had no reported peaks, however.

#### METHODOLOGY

This investigation was conducted in accordance with the Field Operations Plan, Florida Prototype Site Screening Project, Broward and Dade Counties, Florida. All sample collection and sample handling techniques utilized during these investigations were as described in the Water Surveillance Branch Standard Operating Procedures and Quality Assurance Manual, Draft, August 29, 1980.

All analyses were performed by O.H.M., Inc., utilizing procedures specified in Appendix B, NUS Corp. subcontract number Z08050404 (Mobile and Fixed-Based Analytical Laboratory Support, EPA, Region IV) dated June 5, 1985.

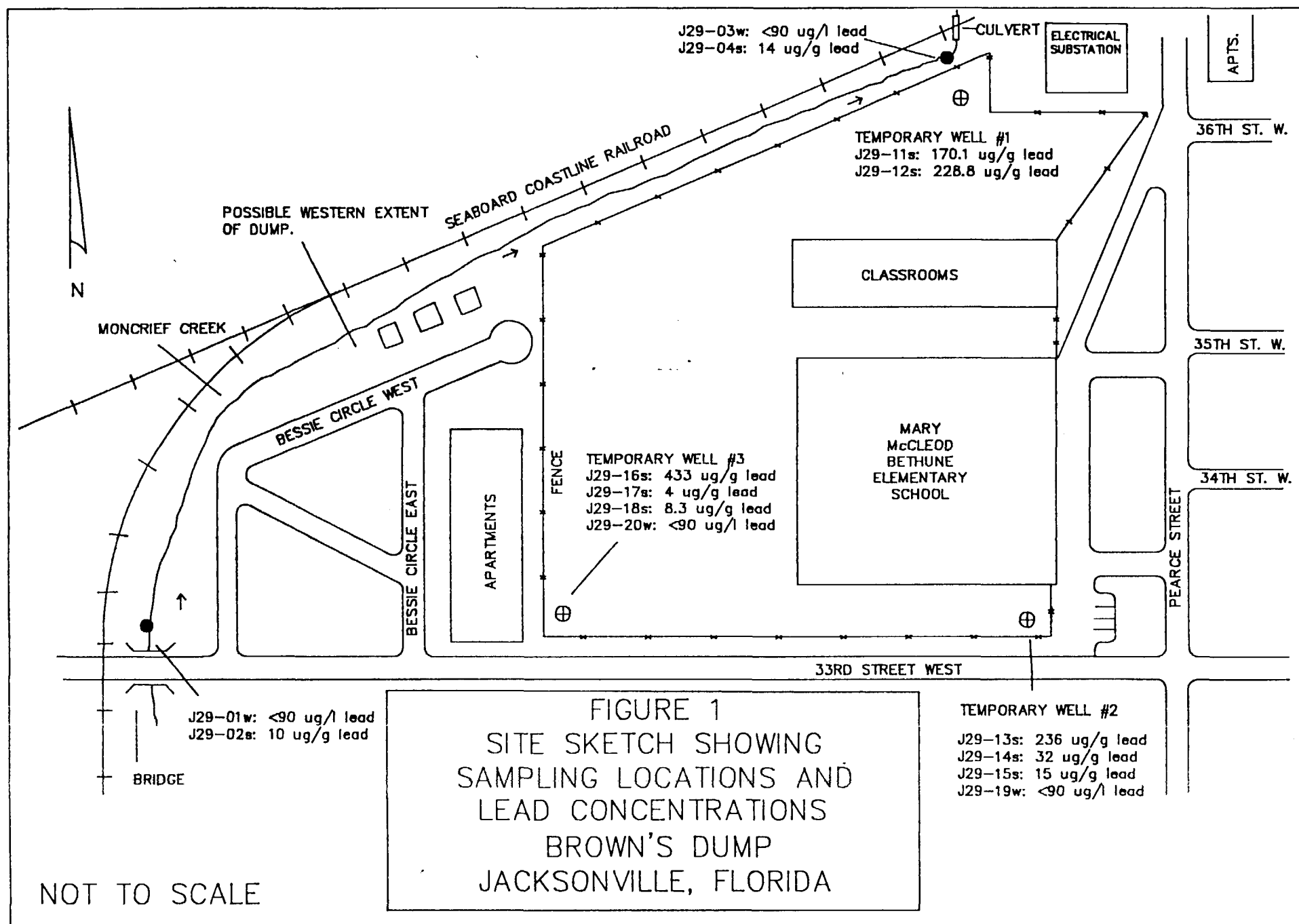


TABLE 1  
SUMMARY OF SAMPLING STATION LOCATIONS  
BROWN'S DUMP  
JACKSONVILLE, FLORIDA

<u>Station No.</u>	<u>Date</u>	<u>Time</u>	<u>Location</u>
J29-01W	11/1/85	1030	Surface water. Unnamed creek upstream of school. Station is at 33rd St. bridge. Duplicate of J29-05W.
J29-02S	11/1/85	1045	Sediment. Unnamed creek upstream of school. Station is same as J29-01W. Duplicate of J29-06S.
J29-03W	11/1/85	0925	Surface water. Unnamed creek downstream of school. Station is south of RR tracks.
J29-04S	11/1/85	0930	Sediment. Unnamed creek downstream of school. Station is same as J29-03W.
J29-05W	11/1/85	1100	Duplicate of J29-01W.
J29-06S	11/1/85	1115	Duplicate of J29-02S.
J29-11S	11/1/85	1115	Surface soil. Temporary monitoring well #1, north of school.
J29-12S	11/1/85	1130	Subsurface soil. Temporary monitoring well #1, north of school. 15-22 inches depth.
J29-13S	11/1/85	1435	Surface soil. Temporary monitoring well #2, southeast of school.
J29-14S	11/1/85	1440	Subsurface soil. Temporary monitoring well #2, southeast of school. 16-21 inches depth.
J29-15S	11/1/85	1450	Saturated zone soil. Temporary monitoring well #2. Southeast of school. 51-57 inches depth.
J29-16S	11/1/85	1455	Surface soil. Temporary monitoring well #3. Southwest of school.
J29-17S	11/1/85	1505	Subsurface soil. Temporary monitoring well #3. Southwest of school. 12-15 inches depth.
J29-18S	11/1/85	1515	Saturated zone soil. Temporary monitoring well #3. Southwest of school. 38-46 inches depth.

J29-19W	11/1/85	1520	Ground water. Temporary monitoring well #2. Southeast of school.
J29-20W	11/1/85	1530	Ground water. Temporary monitoring well #3. Southwest of school.

TABLE 2  
SUMMARY OF FIELD ANALYSES  
BROWN'S DUMP  
JACKSONVILLE, FLORIDA

<u>Station Number</u>	<u>Temperature (°C)</u>	<u>Conductivity (UMHOS/CM)</u>	<u>pH (SU)</u>
J29-01W	N/A	400	6.5
J29-03W	N/A	460	6.5
J29-19W	27	300	6.6
J29-20W	23	320	6.9

N/A - Not Analyzed.



TABLE 3  
ANALYTICAL DATA SUMMARY  
CYANIDE AND METAL DATA - SOIL (ug/g)  
BROWN'S DUMP  
JACKSONVILLE, FLORIDA

STATION	CYANIDE	MERCURY	ARSENIC	SELENIUM	CHROMIUM	ANTIMONY	CADMIUM	LEAD	CORALIT	NICKEL	BARIUM	MANGANESE	VANADIUM	BERYLLIUM	COPPER	SILVER	TIN
J29-02s	BDL	BDL	BDL	BDL	1	(6.0	(0.8	10	(1.0	(2.0	3	2	(.65	(1.3	(1.0	(1.5	N/A
J29-04s	BDL	BDL	BDL	BDL	2	(6.0	(0.8	14	(1.0	(2.0	4	2	(.65	(1.3	1	(1.5	N/A
J29-06s	BDL	BDL	BDL	BDL	1.7	(6.0	(0.8	12.5	(1.0	(2.0	4.0	2.9	(.65	(1.3	1.3	(1.5	N/A
J29-11s	BDL	0.084	BDL	BDL	6.7	(6.0	1.0	170.1	(1.0	(2.0	59.7	79.6	3.8	(1.3	38.3	(1.5	N/A
J29-12s	BDL	0.28	1.6	BDL	46	(6.0	18.4	228.8	13.4	(2.0	486.5	411.0	7.2	(1.3	5.2	(1.5	N/A
J29-13s	BDL	0.086	BDL	BDL	6	(6.0	1	236	1	(2.0	101	151	8	(1.3	51	(1.5	N/A
J29-14s	BDL	BDL	BDL	BDL	1	(6.0	(0.8	32	(1.0	(2.0	45	15	0	(1.3	7	(1.5	N/A
J29-15s	BDL	BDL	BDL	BDL	2	(6.0	(0.8	15	(1.0	(2.0	7	5	1	(1.3	3	(1.5	N/A
J29-16s	BDL	BDL	BDL	BDL	2	(6.0	(0.8	433	(1.0	(2.0	6	34	2	(1.3	2	(1.5	N/A
J29-17s	BDL	BDL	BDL	BDL	1	(6.0	(0.8	4	(1.0	(2.0	5	41	2	(1.3	(1.0	(1.5	N/A
J29-18s	BDL	BDL	BDL	BDL	2.9	(6.0	(0.8	8.3	(1.0	(2.0	5.1	9.9	4.5	(1.3	(1.0	(1.5	N/A

BDL - Parameter, if present, was Below the analytical Detection Limit

( - Indicates that the concentration was below the minimum detection limit,  
the number represents the minimum quantifiable value for that constituent.

TABLE 4  
ANALYTICAL DATA SUMMARY  
CYANIDE AND METAL DATA - WATER (ug/l)  
BROWN'S DUMP  
JACKSONVILLE, FLORIDA

STATION	CYANIDE	MERCURY	ARSENIC	SELENIUM	CHROMIUM	ANTIMONY	CADMIUM	LEAD	COBALT	NICKEL	BARIUM	MANGANESE	VANADIUM	BERYLLIUM	COPPER	SILVER	TIN
J29-01w	11	BDL	BDL	BDL	(10	(120	(10	(90	(30	(40	(100	71	(100	(25	(20	(30	N/A
J29-03w	11	BDL	BDL	BDL	(10	(120	(10	(90	(30	(40	(100	66	(100	(25	(20	(30	N/A
J29-05w	BDL	BDL	BDL	BDL	(10	(120	(10	(90	(30	(40	(100	67	(100	(25	(20	(30	N/A
J29-19w	13	BDL	BDL	BDL	(10	(120	(10	(90	(30	(40	(100	21	(100	(25	(20	(30	N/A
J29-20w	BDL	BDL	BDL	BDL	21	(120	(10	(90	(30	(40	(100	337	(100	(25	(20	(30	N/A

BDL - Parameter, if present, was Below the analytical Detection Limit

( - Indicates that the concentration was below the minimum detection limit,  
the number represents the minimum quantifiable value for that constituent.

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TABLE 5  
ANALYTICAL DATA SUMMARY  
ORGANIC COMPOUND DATA - SOIL (ug/g)  
BROWN'S DUMP  
JACKSONVILLE, FLORIDA

STATION	PCB	*PESTICIDES	BASE/NEUTRAL/ACID	VOLATILE ORGANICS
J29-02s	NO	NONE	NONE	NONE
J29-04s	NO	NONE	NONE	NONE
J29-06s	NO	NONE	1 @ 10-100	NONE
J29-11s	NO	NONE	NONE	NONE
J29-12s	NO	NONE	NONE	NONE
J29-13s	NO	NONE	NONE	NONE
J29-14s	NO	NONE	NONE	NONE
J29-15s	NO	NONE	NONE	NONE
J29-16s	NO	NONE	NONE	NONE
J29-17s	NO	NONE	NONE	NONE
J29-18s	NO	NONE	NONE	NONE

\* - Compounds in this category were detected by gas chromatography/electron capture (GC/EC) detector and may or may not be pesticides.  
Many compounds that fall into the extractable organic category are also detected by GC/EC, i.e. phthalates.

# @ - Indicates number of compound(s) at indicated concentration or concentration range

NO - Indicates no PCB's were detected

YES - Indicates PCB's were detected

NONE - Indicates nothing was detected

TABLE  
ANALYTICAL SUMMARY  
ORGANIC COMPOUND DATA - WATER (ug/l)  
BROWN'S DUMP  
JACKSONVILLE, FLORIDA

STATION	PCB	*PESTICIDES	BASE/NEUTRAL/ACID	VOLATILE ORGANICS
J29-01W	NO	NONE	NONE	NONE
J29-03W	NO	NONE	NONE	NONE
J29-05W	NO	1 @ 1-10	NONE	NONE
J29-19W	NO	NONE	NONE	NONE
J29-20W	NO	NONE	NONE	NONE

\* - Compounds in this category were detected by gas chromatography/electron capture (GC/EC) detector and may or may not be pesticides.  
Many compounds that fall into the extractable organic category are also detected by GC/EC, i.e. phthalates.

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